C-6.5 Summarize the properties of salts, acids, and bases.

Revised Taxonomy Level 2.4 Summarize conceptual knowledge

In physical science students

- **Classify various solutions as acids or bases according to their physical properties, chemical properties (including neutralization and reaction with metals), generalized formulas, and pH (using pH meters, pH paper, and litmus paper). (PS-3.8)**

It is essential that students

- Describe the properties of acids, including
  - The Arrhenius Definition of an acid as a molecular substance that ionizes, releasing hydrogen ions when it is mixed with water.
  - The reaction of acids with metals that are chemically active to produce hydrogen gas
  - The effect of acids on indicators
  - Neutralization of bases
  - Sour taste
  - Have a pH less than 7
- Describe the properties of bases, including
  - The Arrhenius Definition of a base as a substance whose water solution releases hydroxide ions as the only negative ions when it is mixed with water.
  - Bases are electrolytes
  - The effect of bases on indicators
  - Neutralization of acids
  - Water solutions of bases taste bitter and feel slippery
  - Have a pH greater than 7
- Describe the properties of salts, including
  - Salts are defined as ionic compounds containing a positive ion other then the hydrogen ion and a negative ion other than the hydroxide ion.
  - High melting points
  - Good conductors of electric current either when molten or when dissolved in water

Assessment

The revised taxonomy verb, summarize means "to abstract a general theme or major point" For this indicator, the major focus of assessment should be to insure that students can differentiate acids, bases and salts in terms of properties and structures. Conceptual knowledge requires that students understand the interrelationships among the basic elements within a larger structure that enable them to function together. In this case, that students understand how the composition of these species affect the way that they react and their physical properties.